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Relevance scale ☐ ☐ ☐ ☐ ☐**1** [A detailed statistical model for relational query optimization](#)

B. Muthuswamy, Larry Kerschberg

October 1985 **Proceedings of the 1985 ACM annual conference on The range of computing : mid-80's perspective: mid-80's perspective**

Publisher: ACM Press

Full text available: [pdf\(739.18 KB\)](#) Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)**2** [Second-order signature: a tool for specifying data models, query processing, and optimization](#)

Ralf Hartmut Güting

June 1993 **ACM SIGMOD Record , Proceedings of the 1993 ACM SIGMOD international conference on Management of data SIGMOD '93**, Volume 22 Issue 2

Publisher: ACM Press

Full text available: [pdf\(1.38 MB\)](#) Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)**Keywords:** algebra, data model, extensibility, functional programming, optimization, polymorphism, query processing, signature, type system**3** [Implementing a distributed combat simulation on the Time Warp operating system](#)

F. Wieland, L. Hawley, A. Feinberg

January 1989 **Proceedings of the third conference on Hypercube concurrent computers and applications - Volume 2**

Publisher: ACM Press

Full text available: [pdf\(785.77 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

Utilizing the Time Warp Operating System, the CTLS project at JPL has produced a distributed combat simulation called STB-87 and measured its performance on the JPL Mark III Hypercube. By applying the spiral model of software development, the CTLS project will produce a series of software test beds, to culminate in the completion of a working prototype theater level simulation three to five years hence. STB-87, the first software test bed, is a ground-based combat simulation decomposed into ...



### Automatic prototype generating via optimized object model

Sheldon X. Liang, Lynn Zhang, Luqi

June 2003 **ACM SIGAda Ada Letters**, Volume XXIII Issue 2

**Publisher:** ACM Press

Full text available: [pdf\(809.96 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#)

Computer-aided prototyping shows promise that one system under development frees designers from implementation details by executing specifications via reusable components. Ada is first choice for constructing such reusable object-oriented components because Ada95 is the only international standard programming language that supports object-oriented real-time distributed systems. But Ada has diversified object forms that are so intricate that people feel it difficult to find an equivalence of a cl ...

**Keywords:** Automatic Prototype Generating (APG), compositional pattern, encapsulation, inheritance, polymorphism



### 5 Simulation modeling and optimization using ProModel



Rochelle N. Price, Charles R. Harrell

December 1999 **Proceedings of the 31st conference on Winter simulation: Simulation--a bridge to the future - Volume 1**

**Publisher:** ACM Press

Full text available: [pdf\(194.45 KB\)](#) Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)



### 6 Multicriteria optimization of simulation models

Gerald W. Evans, Bruce Stuckman, Mansoor Mollaghasemi

December 1991 **Proceedings of the 23rd conference on Winter simulation**

**Publisher:** IEEE Computer Society

Full text available: [pdf\(667.16 KB\)](#) Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)



**Keywords:** decision analysis, goal programming, multiattribute utility theory, multicriteria optimization

### 7 Software/modelware tutorials: ProModel/MedModel: simulation modeling and optimization using ProModel technology

Charles R. Harrell, Kevin C. Field

December 2001 **Proceedings of the 33rd conference on Winter simulation**

**Publisher:** IEEE Computer Society

Full text available: [pdf\(339.92 KB\)](#) Additional Information: [full citation](#), [abstract](#), [citations](#), [index terms](#)

The ProModel Optimization Suite is a powerful yet easy-to-use simulation tool for modeling all types of manufacturing systems ranging from small job shops and machining cells to large mass production, flexible manufacturing systems, and supply chain systems. ProModel is a Windows based application with an intuitive graphical interface and object-oriented modeling constructs that eliminate the need for programming. It combines the flexibility of a general-purpose simulation language with the conv ...




### 8 A graph-theoretic model for optimizing queries involving methods

Chiang Lee, Chi-Sheng Shih, Yaw-Huei Chen

April 2001 **The VLDB Journal — The International Journal on Very Large Data Bases**, Volume 9 Issue 4



**Publisher:** Springer-Verlag New York, Inc.

Full text available:  [pdf\(266.86 KB\)](#) Additional Information: [full citation](#), [abstract](#), [index terms](#)

Traditional algorithms for optimizing the execution order of joins are no more valid when selections and projections involve methods and become very expensive operations. Selections and projections could be even more costly than joins such that they are pulled above joins, rather than pushed down in a query tree. In this paper, we take a fundamental look at how to approach query optimization from a top-down design perspective, rather than trying to force one model to fit into another. We present ...

**Keywords:** Graph model, Method query, Object-oriented databases, Query optimization, Spanning tree


## 9 Optimization of join operations in horizontally partitioned database systems



Arie Segev

March 1986 **ACM Transactions on Database Systems (TODS)**, Volume 11 Issue 1

**Publisher:** ACM Press

Full text available:  [pdf\(1.74 MB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

This paper analyzes the problem of joining two horizontally partitioned relations in a distributed database system. Two types of semijoin strategies are introduced, local and remote. Local semijoins are performed at the site of the restricted relation (or fragment), and remote semijoins can be performed at an arbitrary site. A mathematical model of a semijoin strategy for the case of remote semijoins is developed, and lower bounding and heuristic procedures are proposed. The results of comp ...

## 10 Contributed articles: A critical review of multi-objective optimization in data mining: a position paper



Alex A. Freitas

December 2004 **ACM SIGKDD Explorations Newsletter**, Volume 6 Issue 2

**Publisher:** ACM Press

Full text available:  [pdf\(211.81 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#)

This paper addresses the problem of how to evaluate the quality of a model built from the data in a multi-objective optimization scenario, where two or more quality criteria must be simultaneously optimized. A typical example is a scenario where one wants to maximize both the accuracy and the simplicity of a classification model or a candidate attribute subset in attribute selection. One reviews three very different approaches to cope with this problem, namely: (a) transforming the original mult ...

**Keywords:** classification, lexicographic approach, multi-objective optimization, pareto dominance

## 11 A declarative approach to optimize bulk loading into databases



Siham Amer-Yahia, Sophie Cluet

June 2004 **ACM Transactions on Database Systems (TODS)**, Volume 29 Issue 2

**Publisher:** ACM Press

Full text available:  [pdf\(1.00 MB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Applications, such as warehouse maintenance, need to load large data volumes regularly. The efficiency of loading depends on the resources that are available at the source and at the target systems. Our work aims to understand the performance criteria that are involved in bulk loading data into a database and to devise tailored optimization strategies. Unlike commercial systems and previous research on the same topic, our

approach follows the fundamental database principle of physical-logical ind ...

**Keywords:** Declarative bulk loading, algebra, recovery, side-effects

## 12 Query Optimization in Database Systems



Matthias Jarke, Jurgen Koch

June 1984 **ACM Computing Surveys (CSUR)**, Volume 16 Issue 2

**Publisher:** ACM Press

Full text available:  pdf(2.84 MB) Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)


## 13 Software/modelware tutorials I: Simulation modeling and optimization using ProModel



Charles R. Harrell, Rochelle N. Price

December 2000 **Proceedings of the 32nd conference on Winter simulation**

**Publisher:** Society for Computer Simulation International

Full text available:  pdf(240.71 KB) Additional Information: [full citation](#), [abstract](#), [citations](#)

The ProModel Optimization Suite is a powerful yet easy-to-use simulation tool for modeling all types of manufacturing systems ranging from small job shops and machining cells to large mass production, flexible manufacturing systems, and supply chain systems. ProModel is a Windows based application with an intuitive graphical interface and object-oriented modeling constructs that eliminate the need for programming. It combines the flexibility of a general-purpose simulation language with the conv ...

## 14 Extracting predicates from mining models for efficient query evaluation



Surajit Chaudhuri, Vivek Narasayya, Sunita Sarawagi

September 2004 **ACM Transactions on Database Systems (TODS)**, Volume 29 Issue 3

**Publisher:** ACM Press

Full text available:  pdf(698.37 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Modern relational database systems are beginning to support ad hoc queries on mining models. In this article, we explore novel techniques for optimizing queries that contain predicates on the results of application of mining models to relational data. For such queries, we use the internal structure of the mining model to automatically derive traditional database predicates. We present algorithms for deriving such predicates for a large class of popular discrete mining models: decision trees, nai ...

**Keywords:** Complex predicate optimization, simpler rules from complex predictive functions

## 15 Rule-based optimization and query processing in an extensible geometric database system



Ludger Becker, Ralf Hartmut Güting

June 1992 **ACM Transactions on Database Systems (TODS)**, Volume 17 Issue 2

**Publisher:** ACM Press

Full text available:  pdf(3.35 MB) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#), [review](#)

Gral is an extensible database system, based on the formal concept of a many-sorted relational algebra. Many-sorted algebra is used to define any application's query language, its query execution language, and its optimization rules. In this paper we describe Gral's optimization component. It provides (1) a sophisticated rule language—rules are transformations of abstract algebra expressions, (2) a general optimization

framework under which more specific optimization algorithms can be ...

**Keywords:** extensibility, geometric query processing, many-sorted algebra, optimization, relational algebra, rule-based optimization


## 16 Optimization of query evaluation algorithms



S. Bing Yao

June 1979 **ACM Transactions on Database Systems (TODS)**, Volume 4 Issue 2

**Publisher:** ACM Press

Full text available:  [pdf\(1.39 MB\)](#)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

A model of database storage and access is presented. The model represents many evaluation algorithms as special cases, and helps to break a complex algorithm into simple access operations. Generalized access cost equations associated with the model are developed and analyzed. Optimization of these cost equations yields an optimal access algorithm which can be synthesized by a query subsystem whose design is based on the modular access operations.

**Keywords:** data manipulation language, database optimization, inverted file, query language, query optimization, relational data model


## 17 Efficient and accurate cost models for parallel query optimization (extended abstract)



Sumit Ganguly, Akshay Goel, Avi Silberschatz

June 1996 **Proceedings of the fifteenth ACM SIGACT-SIGMOD-SIGART symposium on Principles of database systems**

**Publisher:** ACM Press

Full text available:  [pdf\(1.06 MB\)](#)

Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)


## 18 Query optimization in star computer networks



Larry Kerschberg, Peter D. Ting, S. Bing Yao

December 1982 **ACM Transactions on Database Systems (TODS)**, Volume 7 Issue 4

**Publisher:** ACM Press

Full text available:  [pdf\(2.09 MB\)](#)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

Query processing is investigated for relational databases distributed over several computers organized in a star network. Minimal response-time processing strategies are presented for queries involving the select, project, and join commands. These strategies depend on system parameters such as communication costs and different machine processing speeds; database parameters such as relation cardinality and file size; and query parameters such as estimates of the size and number of tuples in ...

**Keywords:** query optimization, relational database system, star computer network

## 19 Description logics for semantic query optimization in object-oriented database systems



Domenico Beneventano, Sonia Bergamaschi, Claudio Sartori

March 2003 **ACM Transactions on Database Systems (TODS)**, Volume 28 Issue 1

**Publisher:** ACM Press

Full text available:  [pdf\(406.56 KB\)](#)

Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Semantic query optimization uses semantic knowledge (i.e., integrity constraints) to transform a query into an equivalent one that may be answered more efficiently. This article proposes a general method for semantic query optimization in the framework of Object-Oriented Database Systems. The method is effective for a large class of queries, including conjunctive recursive queries expressed with regular path expressions and is based on three ingredients. The first is a Description Logic, ODL

**Keywords:** Semantic query optimization, description logics, integrity constraints rules, query rewriting method, semantic expansion of a query, subsumption


20 General applications and methodology: General methodology 1: a robust simulation-based multicriteria optimization methodology



Raid Al-Aomar

December 2002 **Proceedings of the 34th conference on Winter simulation: exploring new frontiers**

**Publisher:** Winter Simulation Conference

Full text available:  pdf(263.24 KB) Additional Information: [full citation](#), [abstract](#), [references](#)

This paper describes a methodology for solving Parameter Design (PD) problems in production and business systems of considerable complexity. The solution is aimed at determining optimum settings to system critical parameters so that each system response is at its optimum performance level with least amount of variability. When approaching such problem, analysts are often faced with four major challenges: representing the complex parameter design problem, utilizing an effective search method t ...

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8	BRS	L8	80	(construction adj unit) same (3D or (three adj dimensional))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	2006/04/28 16:30
9	BRS	L9	1	(construction adj unit) same (3D or (three adj dimensional)) and attributes	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	2006/04/28 16:30
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12	BRS	L12	1	(construction adj unit) same (attributes adj information)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	2006/04/28 16:55
13	BRS	L13	1	"5448652".pn. and (computer)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	2006/04/28 16:58
14	BRS	L14	1	"5448652".pn. and (computer) and detect\$3	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	2006/04/28 16:59
15	BRS	L15	2438	(computer adj readable adj medium) and (detect\$3 same shapes)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	2006/04/28 17:02
16	BRS	L16	841	(computer adj readable adj medium) and (detect\$3 same redundant)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	2006/04/28 17:03

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17	BRS	L17	0	(computer adj readable adj medium) and (detect\$3 same redundant adj shapes)	US- PGPUB; USPAT; USOCR; EPO; JPO; DERWEN T; IBM_TDB	2006/04/28 17:03
18	BRS	L18	0	(computer adj readable adj medium) and (detect\$3 same redundant adj shape)	US- PGPUB; USPAT; USOCR; EPO; JPO; DERWEN T; IBM_TDB	2006/04/28 17:03
19	BRS	L19	0	(computer adj readable adj medium) and (redudant adj attributes)	US- PGPUB; USPAT; USOCR; EPO; JPO; DERWEN T; IBM_TDB	2006/04/28 17:04
20	BRS	L20	9	(computer adj readable adj medium) and (redundant adj attributes)	US- PGPUB; USPAT; USOCR; EPO; JPO; DERWEN T; IBM_TDB	2006/04/28 17:05
21	BRS	L21	3	(computer adj readable adj medium) and (redundant adj attributes) and detect\$3	US- PGPUB; USPAT; USOCR; EPO; JPO; DERWEN T; IBM_TDB	2006/04/28 17:08

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22	BRS	L22	1	"5448696".pn. and computer	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	2006/04/28 17:17
23	BRS	L23	0	(automatic\$3 same (redundant adj shapes))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	2006/04/28 17:18
24	BRS	L24	7745	(optimize same model)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	2006/04/28 17:18
25	BRS	L25	182	(optimize adj model)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	2006/04/28 17:18
26	BRS	L26	5	(optimize adj model) and (shapes same 3D)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	2006/04/28 17:48

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27	BRS	L27	83	(optimize same apparatus) and (shapes same 3D)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	2006/04/28 17:49
28	BRS	L28	0	(optimize adj apparatus) and (shapes same 3D)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	2006/04/28 17:49
29	BRS	L29	1758	703/2.ccls.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	2006/04/28 17:59